IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)	Confirmation No. 1290
Mark Guy Trowbridge.)	Docket No. DN1999119USA
For: AIR SPRING UPPER)	Art Unit: 3683
RETAINER)	Examiner: Benjamin A. Pezzlo
Serial No. 10/009,695)	
Filed: November 6, 2001)	

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(Signature) 2-3-04 **(Date of Signature)**

APPEAL BRIEF

Filed herewith please find Applicant's Appeal Brief, filed in triplicate, pursuant to 37 C.F.R.

The Commissioner is hereby authorized to charge the fee of $330 to Applicant's Deposit Account 07-1725. The Commissioner is also authorized to charge any additional filing fees which may be required or to refund any overpayment to account No. 07-1725. Triplicate copies of this letter are enclosed.

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Respectfully submitted,

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APPEAL BRIEF

Real Party in Interest

The real party in interest of the present application is The Goodyear Tire & Rubber Company.

Related Appeals and Interferences

There are no related appeals or interferences.

Status of Claims

Claims 1-7 and 9-11 are pending in the application. Claims 1-7 and 9-11 stand rejected.

Status of Amendments

There are no outstanding amendments. No amendments have been filed following the most recent rejection.

Summary of the Invention

The present invention is directed to an air spring (1). The air spring (1) has at least three essential elements: a cylindrical elastomeric sleeve (2), a piston (11) to which the one end of the sleeve (2) is secured and which the sleeves rolls down the sides of when the air spring (1) is contracted, and a retainer (8) to which the opposing end of the sleeve (2) is secured. The air spring absorbs and transmits shock loads between parts moveable relative to one another.

The principal aspect of the present invention is the retainer (8). The retainer is a unitary article, providing both bead seating means for the elastomeric sleeve (2) and mounting means (13) for the air spring (1). The retainer (8) has an intermediate reinforcement structure (16) comprised of a plurality of ribs (17) disposed between a pair of plates (18, 19). The ribs (17) provide structural support to the retainer (8) and enable the retainer (8) to be directly mounted to one of the moveable parts to which the air spring (1) is secured. Additional ribbing (20) extending perpendicular to the primary ribbing (17) may be provided to further strengthen the retainer (8). The

mounting means (13) is located on the outer side of the retainer (8) and includes a plate (24) located off-centered on the outer plate (19).

The retainer (8) is formed from a resilient material, preferably thermoplastic having a tensile strength in the range of 28,000 to 45,000 psi and a flex strength in the range of 40,000 to 60,000 psi. If desired, the material may be fiber reinforced.

Issues

Are the claims obvious under 35 U.S.C. § 103 over Koeske et al?

Grouping of Claims

Claims 1-7 and 9-11 are grouped together and stand or fall together.

Arguments

Claims 1- 6 and 9-11 stand rejected under 35 U.S.C. § 103(a) as obvious over Koeske et al.

Claim 7 stands rejected under 35 U.S.C. § 103(a) as obvious over Koeske et al in view of Geno et al.

> *A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.*
> 35 U.S.C. § 103(a)

Koeske et al is cited for disclosing an air spring comprising a flexible cylindrical sleeve 102 secured at each end to form an air chamber therein, the sleeve being secured at one end to a piston 94 and secured at the other end to a retainer 32. It is asserted that the retainer has "an integrally formed intermediate ribbed reinforcement structure 10 to strengthen the retainer, allowing for direct mounting of the air spring to one of the moveable parts (see col 4, lines 56-59)." The intermediate ribbed reinforcement structure is held to comprise "an outer plate (see col 1, line 19: note the spacer can be used for the bead plate 16, thus a structure congruent to outer plate 18 would be used for the bead plate side) and an inner plate 46 which are parallel to each other, and a plurality of ribs 56 that extend between the outer plate and the inner plate."

The failure of Koeske et al to disclose forming the retainer integrally with the intermediate ribbed structure, or for the retainer and intermediate ribbed structure to be a unitary article is recognized in the rejection. To overcome this deficiency, *In re Larson*, 144 USPQ 347 (CCPA 1965) is cited for the court ruling that "providing a one-piece construction would be merely a matter of obvious engineering choice." Thus it has been held that it would have been obvious to one of ordinary skill at the

time of the invention to form the retainer and intermediate ribbed structure of Koeske as a one-piece construction as a "matter of obvious design choice."

Applicant strongly disagrees with this holding as Koeske et al specifically teaches away from forming the separate ribbed spacer as unitary or integral with any other component of the air spring. While there are certainly instances where it would be an obvious design choice to combine elements to form them in a unitary manner, one must also look at the exact elements and what the prior art teaches regarding those elements and why the prior art teaches forming the parts separately.

Koeske teaches that a problem with air springs is the "wide variety of shapes and sizes to fit the numerous suspension system configurations" and that manufacturers are "forced to provide each air spring configuration in a variety of heights and diameters so that each suspension application falls within the design envelope of at least one air spring assembly." (col 1, lines 46-53). The use of separate spacers, to be combined with an airspring thus expands the "design envelope of the air spring assemblies." Koeske teaches that the "spacers thus allow the manufacturer to decrease the total number of air spring configurations in its inventory and manufacturing line." (col 1, lines 57-60). The implication also being that if the air spring as designed by a manufacturer meets the suspension configuration, no spacer is needed.

To convert the spacers into an integral part of the air spring retainer, as asserted in the Office Action, would remove the taught benefit of having a separate spacer. One of the benefits of having a separate spacer is the possibility of not needing one for a particular suspension configuration. Were the airspring of Koeske modified to provide an integral spacer, than that flexibility is removed and the manufacturer is one again forced to increase the number of air spring configurations available for each suspension system configuration.

To form the retainer and the spacer of Koeske as an integral component would be contrary to the expressed goals of Koeske. When using a reference in a prior art rejection, the prior art must be considered in its entirety, including any disclosures that teach away from the claim. *See W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d, 220 USPQ 3030 (Fed. Cir. 1983), *cert. Denied*, 469 U.S. 851 (1984), see also MPEP 2141.02. (See also *In re Gurley*, 27 F.3d 551, 553, 31 U.S.P.Q. 1131, 1132 (Fed. Cir. 1994) 'We have noted elsewhere, as a "useful general rule," that

references that teach away cannot serve to create a *prima facie* case of obviousness.') Herein, Koeske specifically teaches the necessity to have separate elements, teaching away from forming the spacer and any part of the air spring as a unitary article while *in re Larson* teaches forming a unitary article, thus the teachings/holdings cannot be combined.

In response to these arguments, it has been held that "Koeske et al essentially teaching that making the spacer separate from or unitary with the retainer is a design choice," again relying solely on the "design choice" court holding of *In re Larson*, and providing no other reasoning or motivation to completely alter the teachings of Koeske.

When obviousness is based on a single prior art reference, there must still be a showing of a suggestion or motivation to modify the teachings of that reference. *In re Kotzab*, 55 USPQ2d 1313, 1316-1317 (Fed. Cir. 2000). A determination of obviousness must be based on § 103, not upon a "mechanical rule" such as the holding of *In re Larson*, see *In re Wright*, 145 USPQ 182, 190 (CCPA 1965). The "mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification" (*In re Fritch*, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992).

Thus, the requirements of establishing *prima facie* obviousness under *Graham v. Deere* must still be met. There 1) must be some suggestion or motivation in the art to modify or combine the references; 2) must be a reasonable expectation of success and 3) the combined references must teach or suggest all the claim limitations.

There is no motivation in Koeske et al to modify the spacer to be an integral part of the air spring. Koeske et al specifically teachings forming the ribbed element as a separate element to obtain specific results – flexibility in fitting an air spring to its intended environment.

Any teaching or suggestion to form a ribbed intermediate element as part of the air spring flows solely from Applicant's own teachings. Applicant's reasoning for providing the integrally formed intermediate ribbed structure as part of the retainer is to strength the retainer sufficiently to obviate the use of additional mounting means for the air spring. Applicant's air spring can be directly mounted to the vehicle, and does not require additional mounting plates or other mounting means.

As the Examiner has failed to establish a case of *prima facie* obviousness of the claims under 35 U.S.C. § 103 over Koeske et al, it is respectfully requested that the rejection of the claims over Koeske et al be withdrawn.

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CLAIMS

1. An air spring (1) for absorbing and transmitting shock loads between parts moveable relative to one another, the air spring (1) comprising a flexible cylindrical sleeve (2) which is secured at each end to form a fluid chamber (14) therein, a piston (11), the sleeve (2) being secured at one end (6) to a retainer (8) and being secured at the opposing end (9) by the piston (11), the air spring being characterized by:

   the retainer (8) being integrally formed with the intermediate ribbed reinforcement structure (16) to strengthen the retainer, allowing for direct mounting of the air spring (1) to one of the moveable parts, the intermediate ribbed reinforcement structure (16) of the retainer (8) comprising an outer plate (18) and an inner plate (19) which are parallel to each other, and a plurality of ribs (17 to 20) that extend between the outer plate (18) and the inner plate (19).

2. An air spring (1) in accordance with claim 9 wherein the retainer is further characterized by the intermediate ribbed reinforcement structure (16) comprising a plurality of extending ribs (17 or 20).

3. An air spring (1) in accordance with claim 1 wherein the retainer is further characterized by the ribs (17 or 20) extending the full width of the intermediate reinforcement structure (16).

4. An air spring (1) in accordance with claim 1 wherein the ribbed reinforcement structure (16) is further characterized by at two sets of ribs (17 or 20) extending at angles relative to each other (20 or 17).

5. An air spring (1) in accordance with claim 1 wherein the retainer (8) is further characterized by being formed from a thermoplastic material having a tensile strength in the range of 1965 to 3165 kg/cm^2 (28,000 to 45,000 psi), and a flex strength in the range of 2810 to 4220 kg/cm^2 (40,000 to 60,000 psi).

6. An improved airspring (1) in accordance with claim 5 wherein the retainer (8) is further characterized by being formed from a material selected from the following group: fiberglass reinforced nylon, long fiber reinforced thermoplastic, and short fiber reinforced thermoplastic.

7. An air spring (1) in accordance with claim 1 wherein the retainer (8) is further characterized by air inlet means (21, 23) that extends through the intermediate ribbed reinforcement structure (16).

9. An air spring (1) for absorbing and transmitting shock loads between parts moveable relative to one another, the air spring (1) comprising a flexible cylindrical sleeve (2) which is secured at each end to form a fluid chamber (14) therein, a piston (11), the sleeve (2) being secured at one end (6) to a retainer (8) and being secured at the opposing end (9) by the piston (11), the air spring being characterized by:

the retainer (8) formed as a unitary article and comprising a bead seat means (12) for securing the one end (6) of the sleeve (2), mounting means (13) for direct mounting of the air spring (1) to one of the moveable parts, and an intermediate ribbed reinforcement structure (16) located between the bead seat means (12) and the mounting means (13).

10. An air spring (1) in accordance with claim 9 wherein the intermediate ribbed reinforcement structure (16) has ribs (17 or 20) that extend the full width of the intermediate reinforcement structure (16).

11. An air spring (1) in accordance with claim 9 wherein the intermediate ribbed reinforcement structure (16) has two sets of ribs (17 or 20) extending at angles relative to each other (20 or 17).